



Dell Networking S-Series

S4820T high-performance 1/10/40GbE top-of-rack switch

High-density, 1RU 48-port 1/10G BASE-T switch plus four 40GbE uplinks with non-blocking line-rate performance; feature-rich Dell Networking Operating System (FTOS); optimized for iSCSI, DCB and ToR applications for Dell 12G rack servers, blade servers with Dell Networking MXL blade switch, and storage solutions.

High Density 1/10G BASE-T Switch

The Dell Networking S-Series S4820T 1/10G BASE-T Top-of-Rack (ToR) switch is purpose-built for high performance data centers. By leveraging a non-blocking, cut-through (default mode is store and forward) switching architecture, the S4820T delivers line-rate L2/L3 features to maximize network performance. The S4820T design provides (48) 1/10G BASE-T ports that support 100Mb/1Gb/10Gb and four 40GbE QSFP+ uplinks. Each 40GbE QSFP+ uplink can be broken out into four 10GbE ports using breakout cables.

Priority-based Flow Control (PFC), Enhanced Transmission Selection (ETS), Data Center Bridge Exchange (DCBx) coupled with line rate throughput positions the S4820T as an ideal solution for data center ToR applications for servers, and storage arrays. In addition, the S4820T incorporates multiple architectural features that optimize data center network flexibility, efficiency, and availability. These features include IO panel to PSU airflow or PSU to IO panel airflow for hot/cold aisle environments, and redundant, hot-swappable power supplies and fans.

S4820T also supports Dell Networking's Open Automation Framework, which provides advanced network automation and virtualization capabilities for virtual data center environments. The Open Automation Framework is comprised of a suite of inter-related network management tools that can be used together or independently to provide a network that is flexible, available and manageable while helping to reduce operational expenses.

Key applications

- High-density 1/10G BASE-T ToR server aggregation in high-performance data center environments
- Design with the Z-Series core switch to create a two-tier, non-blocking 1/10/40GbE data center network architecture
- Lossless iSCSI storage deployments using DCB
- Enterprise, Web 2.0, and cloud service providers' data center networks for ToR and end of row applications

Key features

- 1/10GbE copper connectivity for maximum flexibility and investment protection
- 1.28 Tbps (full-duplex) non-blocking, cut-through (default mode is store and forward) switching fabric offers line-rate performance
- IO panel to PSU airflow or PSU to IO panel airflow
- Redundant, hot-swappable power supplies and fans

- Modular Dell FTOS software offers inherent stability as well as advanced monitoring and serviceability functions
- Supports jumbo frames for high-end performance in virtualized environments and IP storage/server communication
- 128 link aggregation groups with up to 8 members per group
- Support for L2 multipath using Virtual Link Trunking (VLT) & enhanced VLT (eVLT)
- Scalable L2/L3 Ethernet switching with QoS and standards-based IPv4/IPv6 features
- User port stacking support for up to 6 units that is managed as one logical device
- Open Automation Framework adds VM-awareness as well as automated configuration and provisioning capabilities to simplify the management of virtual network environments

1/10G BASE-T Cabling Distances

Cable Type	1G BASE-T	10G BASE-T
Cat 6 UTP	100m (330 ft)	55m (180 ft)
Cat 6 STP	100m (330 ft)	100m (330 ft)
Cat 6A UTP	100m (330 ft)	100m (330 ft)
Cat 7	100m (330 ft)	100m (330 ft)

Flexible, powerful
top-of-rack switch for
data centers of all sizes

Specifications: S4820T 1/10G BASE-T High-Performance Top-of-Rack Switch

Dell SKU description	
S4820T 1/10G BASE-T	
S4820T 1/10G BASE-T, 48 x 1/10G BASE-T, 4 x QSFP+, 1 x AC PSU, 2 x Fans, IO Panel to PSU Airflow	
S4820T 1/10G BASE-T, 48 x 1/10G BASE-T, 4 x QSFP+, 1 x AC PSU, 2 x Fans, PSU to IO Panel Airflow	
S4820T 1/10G BASE-T, 48 x 1/10G BASE-T, 4 x QSFP+, 1 x DC PSU, 2 x Fans, IO Panel to PSU Airflow	
S4820T 1/10G BASE-T, 48 x 1/10G BASE-T, 4 x QSFP+, 1 x DC PSU, 2 x Fans, PSU to IO Panel Airflow	
S4820T 1/10G BASE-T, 48 x 1/10G BASE-T, 4 x QSFP+, 1 x AC PSU, 2 x Fans, IO panel to PSU Airflow, TAA	
S4820T 1/10G BASE-T, 48 x 1/10G BASE-T, 4 x QSFP+, 1 x AC PSU, 2 x Fans, PSU to IO Panel Airflow, TAA	
Redundant power supplies	
S4820T 1/10G BASE-T, AC Power Supply, IO Panel to PSU Airflow	
S4820T 1/10G BASE-T, AC Power Supply, PSU to IO Panel Airflow	
S4820T 1/10G BASE-T, DC Power Supply, IO Panel to PSU Airflow	
S4820T 1/10G BASE-T, DC Power Supply, PSU to IO Panel Airflow	
Fans	
S4820T 1/10G BASE-T fan module, IO Panel to PSU Airflow	
S4820T 1/10G BASE-T fan module, PSU to IO SR4 Panel Airflow	
Optics	
Transceiver, QSFP+, 40GbE SR Optics, 850nm Wavelength, 100-150m Reach on OM3/OM4	
Transceiver, QSFP+, 40GbE eSR Optics, 850nm Wavelength, 300-400 Reach on OM3/OM4	
Transceiver, QSFP+, 40GbE LR4 Long Reach, 4xWDM channel, 1310nm, 10km Reach on SMF	
Cables	
Cable, 40GbE QSFP+, Direct Attach Cable, 1m	
Cable, 40GbE QSFP+, Direct Attach Cable, 5m	
Cable, 40GbE QSFP+ to 4xSFP+ Direct Attach Breakout Cable, 5m	
Cable, 40GbE MTP to 4xLC Optical Breakout Cable (optics not included), 5m	
Cable, 40GbE QSFP+, Active Fiber Optic, 10m	
Cable, 40GbE QSFP+, Active Fiber Optic, 50m	
Software	
Software, FTOS – Force10 Operating System Software, S4820T 1/10G BASE-T	
Note: In-field change of airflow direction not supported.	

Physical	
48 line-rate 1/10G BASE-T ports	
4 line-rate 40GbE QSFP+ ports	
1 RJ45 console/management port with RS232 signaling	
Size: 1 RU, 1.71" h x 17.09" w x 18.11" d (4.35 h x 43.4 w x 46.0 cm d)	
Weight: 21.7 lbs (9.86 kg)	
ISO 7779 A-weighted sound pressure level: 65 dBA at 78.8°F (26°C)	
Power supply: 100–240 VAC 50/60 Hz	
1) AC forward airflow	
2) AC reverse airflow	
Power supply: 40.5-60 VDC	
1) DC forward airflow	
2) DC reverse airflow	
Max. thermal output: 1433 BTU/h	
Max. current draw per system:	
4.2A at 100/120V VAC 2.1A at 200/240VAC	
10.4A at 40.5 VDC 7 A at 60VDC	
Max. power consumption: 420W (at AC input or DC input)	
Typ. power consumption: 360 Watts	
Max. operating specifications:	
Operating temperature: 32° to 104°F (0° to 40°C)	
Operating humidity: 5 to 90% (RH), non-condensing	
Operating altitude: 0ft to 6600ft above sea level	
Max. non-operating specifications:	
Storage temperature: -40° to 158°F (-40° to 70°C)	
Storage humidity: 5 to 90% (RH), non-condensing	
Redundancy	
Hot swappable redundant power	
Hot swappable redundant fans	
User port stacking up to 6 units	
Performance	
MAC addresses:	128K
IPv4 routes:	16K
IPv6 routes:	8K (shared CAM space with IPv4)
Switch fabric capacity:	1.28 Tbps (full-duplex)
	640 Gbps (half-duplex)
Forwarding capacity:	960 Mpps
Link aggregation:	8 links per group, 128 groups per stack
Queues per port:	4 queues

Layer 2 VLANs:	4K	Multicast	
MSTP :	64 instances	1112 IGMPv1	3569 SSM for IPv4
Line-rate Layer 2 switching:	all protocols, including IPv4 and IPv6	2236 IGMPv2	4541 IGMPv1/v2 Snooping
Line-rate Layer 3 routing:	IPv4 and IPv6	3376 IGMPv3	draft-ietf-pim-smv2-new-05 PIM-SM
IPv4 host table size	16K		
IPv6 host table size	8K		
IPv4 Multicast table size	8K		
LAG load balancing:	based on Layer 2, IPv4 or IPv6 headers		
Latency	3.3 μ sec		
Packet buffer memory:	9MB		
CPU memory:	2GB		
IEEE Compliance		Network Management	
802.1AB	LLDP	1155 SMIV1	
802.1ag	Connectivity fault Management	1156 Internet MIB	
802.1D	Bridging, STP	1157 SNMPv1	
802.1p	L2 Prioritization	1212 Concise MIB Definitions	
802.1Q	VLAN Tagging, Double VLAN Tagging, GVRP	1215 SNMP Traps	
802.1Qaz	Enhanced Transmission Selection (ETS)	1493 Bridges MIB	
802.1Qbb	Priority-based Flow Control (PFC)	1850 OSPFv2 MIB	
	DCBx (CIN, CEE, and IEEE2.5)	1901 Community-based SNMPv2	
802.1s	MSTP	2011 IP MIB	
802.1w	RSTP	2012 TCP MIB	
802.1X	Network Access Control	2013 UDP MIB	
802.3ab	Gigabit Ethernet (1000BASE-T)	2096 IP Forwarding Table MIB	
802.3ac	Frame Extensions for VLAN Tagging	2570 SNMPv3	
802.3ad	Link Aggregation with LACP	2571 Management Frameworks	
802.3ae	10 Gigabit Ethernet (10GBASE-X)	2572 Message Processing and Dispatching	
802.3ba	40 Gigabit Ethernet (40GbBase-SR4, 40GbBase-CR4) on optical ports	2576 Coexistence Between SNMPv1/v2/v3	
802.3u	Fast Ethernet (100BASE-TX) on mgmt ports	2578 SMIV2	
802.3x	Flow Control	2579 Textual Conventions for SMIV2	
802.3z	Gigabit Ethernet (1000BASE-X)	2580 Conformance Statements for SMIV2	
ANSI/TIA-1057	LLDP-MED	2618 RADIUS Authentication MIB	
Force10	PVST+	2665 Ethernet-like Interfaces MIB	
MTU	12,000 bytes	2674 Extended Bridge MIB	
		2787 VRRP MIB	
		2819 RMON MIB (groups 1, 2, 3, 9)	
		2863 Interfaces MIB	
		2865 RADIUS	
		3273 RMON High Capacity MIB	
		3416 SNMPv2	
		3418 SNMP MIB	
		3434 RMON High Capacity Alarm MIB	
		3580 802.1X with RADIUS	
		5060 PIM MIB	
ANSI/TIA-1057		ANSI/TIA-1057 LLDP-MED MIB	
draft-grant-tacacs-02		TACACS+ BGP MIBv1	
draft-ietf-idr-bgp4-mib-06		LLDP MIB	
IEEE 802.1AB		LLDP DOT1 MIB	
IEEE 802.1AB		LLDP DOT3 MIB	
ruzin-mstp-mib-02		MSTP MIB (traps)	
sFlow.org		sFlow5 sFlow5 MIB (version 1.3)	
FORCE10-BGP4-V2-MIB		FORCE10 BGP MIB (draft-ietf-idr-bgp4-mibv2-05)	
FORCE10-IF-EXTENSION-MIB			
FORCE10-LINKAGG-MIB			
FORCE10-COPY-CONFIG-MIB			
FORCE10-MON-MIB			
FORCE10-PRODUCTS-MIB			
FORCE10-SS-CHASSIS-MIB			
FORCE10-SMI			
FORCE10-SYSTEM-COMPONENT-MIB			
FORCE10-TC-MIB			
FORCE10-TRAP-ALARM-MIB			
FORCE10-FORWARDINGPLANE-STATS-MIB			
Regulatory Compliance		Safety	
		UL/CSA 60950-1, Second Edition	
		EN 60950-1, Second Edition	
		IEC 60950-1, Second Edition Including all National Deviations and Group Differences	
		EN 60825-1 Safety of Laser Products Part 1: Equipment Classification Requirements and User's Guide	
		EN 60825-2 Safety of Laser Products Part 2: Safety of Optical Fibre Communication Systems	
		FDA Regulation 21 CFR 1040.10 and 1040.11	
Emissions		Immunity	
		Australia/New Zealand: AS/NZS CISPR 22 Class A	
		Canada: ICES-003, Issue-4, Class A	
		Europe: EN 55022:2006+A1:2007 (CISPR 22), Class A	
		Japan: VCCI V3/2009 Class A	
		USA: FCC CFR 47 Part 15, Subpart B, Class A	
RoHS		RoHS	
		All S-Series components are EU RoHS compliant.	

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